DEPARTMENT OF HEALTH

ANNUAL REPORT

DIVISION PUBLIC HEALTH ENGINEERING

1980

ANNUAL REPORT
DIVISION OF PUBLIC HEALTH ENGINEERING
DEPARTMENT OF HEALTH
PROVINCE OF NOVA SCOTIA

To the Administrator of Environmental Health:

I respectfully submit the report of the Division of Public Health Engineering for the Calendar Year 1980.

Respectfully submitted,

Peter J. Casey, P. Eng.
Director, Division of
Public Health Engineering

ANNUAL REPORT

DIVISION OF PUBLIC HEALTH ENGINEERING

DEPARTMENT OF HEALTH

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SECTION I

RESPONSIBILITIES OF THE DIVISION

The Division of Public Health Engineering includes both inspection and engineering components and provides services in all phases of environmental sanitation to departmental, municipal and provincial officials, as well as the general public.

The engineering portion includes five regional public health engineers who report to the Director of Public Health Engineering. Each region is assigned as near as possible on a workload basis and can cover part of, or one or more Health Units. The inspection function is carried out through the eight Health Units in the Province. Public Health Inspectors in each Health Unit report to a Supervisor of Inspectors who in turn reports to the Health Unit Director. The Chief Public Health Inspector is responsible for the technical competence of the Inspection staff through their Supervisors. Both the inspection and engineering components are complementary to each other and a close liaison is maintained between both groups.

Regional Public Health Engineers perform duties as specialists in Public Health Engineering and under the general direction of the Director, are responsible for advising, consulting, planning, inspecting and coordinating the technical plans, policies, procedures and programs at the Health Unit level.

Engineering plans, specifications, and reports of all water and sewage works, major subdivisions, school projects, milk pasteurization plants, campgrounds, trailer parks, swimming pools and construction and extensions to these projects are reviewed by the Public Health Engineers prior to departmental approval being given.

Functioning under the Director, the Chief Public Health Inspector monitors the Public Health Inspection programs carried out in each Health Unit in the Province, assists in the formation of policy related to sanitation and through Health Unit Directors and the Supervisors, initiates the implementation of new programs and standards.

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Under the direction of the Supervisor of Public Health Inspectors, the Public Health Inspector carries out inspections, regulatory and educational work in promoting and maintaining established standards of sanitation in assigned areas of the Province.

The duties of the Public Health Inspector include inspecting, sampling, testing, reporting and recommending on Public Health Inspection programs, including eating establishments, food vending, housing, schools, foodshops, hair dressing and barber shops, tourist establishments, homes, on-site sewage disposal, garbage disposal, swimming pools, swimming areas, summer camps, picnic sites, public and private water supplies, water and sewage treatment plants, meat processing plants, complaints, food poisoning outbreaks, communicable disease control, pest control,pasteurization plants, and all milk and milk products outlets.

The Division is responsible for preparing departmental policy and guidelines on the technical aspects of all facets of public health inspection and engineering, including pasteurization plant inspection and milk sampling, on-site sewage disposal, sewage treatment plant inspection, municipal water supply sampling and inspection, swimming and recreational sanitation, school inspections, to name a few. Ultimately, policy guidelines will be prepared by Divisional staff covering each and every major sanitation program. Periodic reviews of policy guidelines and inspection programs with updating and revisions made as required.

The Division is also responsible for the preparation and revision of regulations relating to any phase of environmental sanitation on a provincial basis, and for the review of municipal regulations made under the authority of the Health Act. Preparation of related inspection and report forms is also a function of the Division.

Educational and instructional activities are a major portion of the work program of the Division. Administration and coordination of Health Education programs on a province-wide basis such as in-staff training and

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foodhandler's courses, is a responsibility of the Division. Lectures are given to other health-related disciplines in all phases of environmental sanitation, papers are presented at professional conferences and meetings, and talks are given to community gatherings.

Division staff represent the Department on interdepartmental committees related to regional planning, solid waste disposal subdivisions, housing, well drilling, campgrounds and trailer parks, milk quality, planning and development, and other matters which require input from the Division. Federal/Provincial committees on such subjects as water quality, environmental contaminants and liaison with federal inspection staff, also require participation by divisional staff, as well as many local, municipal or regional bodies. Divisional staff also participate actively in appropriate professional organizations, including Canadian Public Health Association, Public Health Association of Nova Scotia, Canadian Institute of Public Health Inspectors, American Water Works Association and the Nova Scotia Association of Professional Engineers.

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SECTION II

HIGHLIGHTS OF WORK PROGRAM - 1980

1. Amendments to the Health Act and to the Regulations Respecting On-Site Sewage Disposal Systems, as recommended in the Waller Report, were adopted in 1980.

2. An educational program, to explain the amendments, for Boards of Health in the Province was carried out. Most Boards covering rural areas were visited by personnel of the Division of Public Health Engineering.

3. Further amendments to the On-Site Sewage Disposal Regulations and adoption of Regulations Respecting Subdivision Development (currently being drafted) are anticipated during 1981.

4. Uranium in drinking water supplies continued as a concern in 1980, and a Provincial Task Force, under the chairmanship of David A. Grantham, P.Eng., was established to study the problem.

5. Arsenic also continued as a contaminant of concern and an arsenic removal unit, for individual homes, was approved for use in Nova Scotia with appropriate safeguards. The unit is not yet being built but the developer, the Nova Scotia Research Foundation, is seeking a suitable manufacturer.

6. Urea formaldehyde was banned from further use as an insulating material in 1980 (this bann was made permanent in 1981) by the Federal Government and the Department of Health (Occupational Health and Public Health Engineering Divisions)are cooperating in a monitoring program. This program is for residents who are concerned about the use of urea formaldehyde insulation in their homes.

7. During 1980, the Division of Public Health Engineering, with the welcome cooperation of the inspection staff, completed a survey of all schools in the Province for asbestos containing materials. Recommendations for remedial measures and precautionary measures are being implemented by both the Department of Health and the Department of Education. Further surveys of hospitals and social service establishments are currently underway .

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8. Zero based budgeting system was implemented in the Department of Health in 1980. This was an interesting experience and should prove beneficial.

9. Personnel in the Division of Public Health Engineering participated in implementation of the Hay system of management evaluation. The results of this evaluation are awaited with interest.

10. The marked improvement of the quality of dairy products across the Province continued in 1980.

11. There was a notable increase in public health inspection activity in 1980. This may be partly due to computer foul-ups of the inspection data in 1979, but probably also reflects an overall improvement in inspections.

12. Nine hundred and three foodhandlers received national certification in 1980. This reflects well on the foodhandlers who participated and the inspection staff giving the courses.

13. A course on on-site sewage disposal for professional engineers has been planned for presentation in early 1981.

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SECTION III

PERSONNEL

The Central Office staff of the Division of Public Health Engineering during 1980, included the following:

Director:	Peter J. Casey, P. Eng.
Chief Public Health Inspector:	Michael D. MacPhee, B.Sc., CPHI(C)
Secretary:	Mrs. Jane MacKenzie

Five Regional Public Health Engineers were employed with the Division during the year, providing public health engineering services to the Health Units as noted below:

Atlantic Health Unit	David A. Grantham, P. Eng.
Portions of Atlantic and Fundy Health Units	Willard J. D'Eon, P. Eng.
Fundy Health Unit	Mohan Singh, P. Eng.
Western Health Unit	Mohan Singh, P. Eng.
Lunenburg-Queens Health Unit	Mohan Singh, P. Eng.
Cobequid Health Unit	Donald M. Reid, P. Eng.
Northumberland Health Unit	Donald M. Reid, P. Eng.
Cape Breton North Health Unit	Arun R. Kumbhare, P. Eng.
Cape Breton South Health Unit	Arun R. Kumbhare, P. Eng.

Four Ryerson graduates and one first year Ryerson student completed field training during the past year.

There were four summer students employed at intervals during the months of June, July and August.

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There are five public health inspection students in attendance at school for the 1980-81 term, of which four will be graduating in the Spring of 1982. The number of first year students beginning the Fall term will be increased from four to six.

One of the main functions of the Division of Public Health Engineering is the technical and program monitoring of public health inspectors of which there are eight (8) Supervisors and fifty-nine (59) Inspectors distributed throughout eight (8) Health Units in the Province. A great deal of emphasis is also placed upon program development, to include surveillance of food and water supplies for parameters which develop because of new information acquired through research.

The Division also coordinates inter-departmental and inter-governmental relationships insofar as development and continuance of environmental programs are concerned.

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SECTION IV

PUBLIC HEALTH INSPECTION

The work output by the Health Inspection staff within the Health Units showed a very marked increase during 1980. This is a reversal of the trend of last year which was characterized by decreasing activity and work output. Part of this could be caused by continued difficulties being experienced with computerization.

On a province-wide basis, the number of inspections increased by 28.5%, the number of samples collected by 18.7%, the number of tests by 29.7% and the number of visits to establishments by 23.6%.

The inspection of eating and other food establishments, the monitoring of water supplies, the assessment of building sites (to include final inspections) and education, continue to be the major part of the inspector's workload.

As in the past years, the main difficulty is to maintain the programs which are related to the tourist season, namely the inspection, monitoring and follow-up of tourist establishments, campsites, picnic sites, summer camps and eating establishments which remain open for the months of May-October. This situation is brought about by the demand created by home building and the sampling of swimming areas.

The health inspection staff were very active in the field of education during the past year. Special emphasis is being placed on foodhandler's education, using mainly course 2/3 as developed by the Canadian Restaurant Association. This program has now extended to all areas of the Province and is offered to restaurants, cafeterias, homes for special care, day care centers, training schools, etc. A total of 903 foodhandlers received their Canadian Restaurant Certification during 1980.

One Inspector Educator works full time in the Atlantic Health Unit and is barely able to cope with the demands of his services. As suggested in the

past years reports, the services of an additional Educator in the Atlantic Health Unit would be desirable, along with two others placed in the Eastern and Western portions of the Province.

Table I shows the total number of inspections carried out in the Province and the Health Units for the years 1974 - 1980, inclusive.

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TABLE I

NUMBER OF INSPECTIONS

YEAR	ATL.	CBN.	CBS.	COB.	FUN.	L-Q.	NORTH	WEST	PROV.
1974	12283	4823	5271	2669	3412	2346	2645	2178	35648
1975	11313	4889	5108	2846	3651	3621	2521	2466	36374
%DIF	-8.5%	+1.2%	-1.6%	+4.1%	+3.9%	+48%	-4.5%	+12.7%	+2%
1976	12679	6369	5817	3234	3956	4014	3516	3534	43146
%DIF	+12.1%	+30.0%	+14.0%	+13.6%	+8.6%	+10.1%	+31.5%	+43.3%	+18.6%
1977	13161	5597	5933	4568	4102	4419	3898	3454	45155
%DIF	3.8%	-12.1%	+2.0%	+41.3%	+3.5%	+10.0%	+17.2%	-2.3%	+4.7%
1978*	13427	5877	6990	4959	4936	4239	4253	3460	48153
%DIF	+2.8%	+5.0%	+17.8%	+8.6%	+20.3%	-4.0%	+9.1%	+0.2%	+6.6%
1979	11343	5221	5785	3415	4397	3422	3322	3605	40503
%DIF	-18%	-11%	-17%	-31%	-11%	-19%	-22%	+.4%	-16.7%
1980	15662	4911	6413	6072	4645	4153	3695	4126	52038
%DIF	+38%	-6%	+11%	+78%	+6%	+21%	+11%	+14%	+28%

*Prorated to indicate 12 months.

TABLE 2 - (next 2 pages)

A continual review of operation programs carried out by inspectors within the Health Units starting as far back as 1972, when a projected optimum was calculated, is shown by the following table extending from 1975 until the present.

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TABLE 2

PROGRAM	ACTIVITY	REQUIRED INSPECTIONS VISITS OR SAMPLES (OPTIMUM)	NO. OF INSPECT. (1975)	NO. OF INSPECT. (1976)	NO. OF INSPECT. (1977)	NO. OF INSPECT. (1978) *	NO. OF INSPECT. (1979)	NO. OF INSPECT. (1980)
SEWERAGE	(a)Building lot Insp. for Pvt. Sewage Disposal	Depends upon population increase & movement to suburbs	11,398	12,372	11,100	12,459	10,489	10,655
	(b) S.T.P.	6,000	1,087	1,343	1,578	1,286	1,408	1,893
	(c)Complaints	No Upper Limit	3,609	3,927	3,006	3,390	3,286	3,713
WATER	(a)Monitoring Pub. Supplies	15,000	7,774 (v) 13,175 (s)	9,809 15,202	14,938 22,045	13,734 21,211	11,071 (v) 19,215 (s)	13,156 (v) 22,265 (s)
	(b)Monitoring Pvt. Supplies	Determined by Demand	2,398 (v) 2,470 (s)	3,652 4,705	4,519 4,674	4,465 4,804	5,256 (v) 5,814 (s)	6,588 (v) 7,318 (s)
	(c) W.T.P.	1,500	254	460	526	399	361	468
MILK & DAIRY PRODUCTS	(a)Pasteurization Plants	500	241	347	402	428	366	451
	(b)Sampling	10,000 (s)	6,558	8,484	9,262	9,384	8,514	9,877
FOOD SANITATION	(a)Eating Establishments	15,000	5,693	6,868	9,250	8,951	7,818	11,494
	(b)Food Processing Plants	200	32	46	36	27	21	68
	(c)Food Shops	6,000	2,420	2,712	3,187	3,020	2,508	4,237
	(d)Sampling	16,000	3,476	8,421	9,660	10,630	8,827	11,389

Note: Where there is a (v) = Visits; (s) = Samples; * 11 Month Period

TABLE 2 (Cont'd)

PROGRAM	ACTIVITY	REQUIRED INSPECTIONS VISITS OR SAMPLES (OPTIMUM)	NO. OF INSPECT. (1975)	NO. OF INSPECT. (1976)	NO. OF INSPECT. (1977)	NO. OF INSPECT. (1978) *	NO. OF INSPECT. (1979)	NO. OF INSPECT (1980)
SCHOOL	(a)Inspections	1,800	1,296	1,639	1,607	1,557	1,663	3,140
RECREATIONAL SANITATION	(a)Swimming Pool & Swimming Areas	4,000	1,171 (v) (I)	1,609 617	1,458 526	1,120 528	1,345 (v) 639 (I)	1,535 (v) 903 (I)
	(b)Campground &Picnic Areas	1,500	489 (v)	658	824	777	832 (v) 1,020 (s)	897 (v) 894 (s)
	(c)Tourist Homes & Motels	1,500	587 (I) (v)	219 722	131 706	209 816	199 (I) 780 (v)	214 (I) 733 (v)
SOLID WASTE DISPOSAL	(a)Dumps, Landfills, etc.	1,000	574	755	716	661	481 (I)	693 (I)
	(b)Salvage Yards	Request Basis	27	42	35	32	41	53
HOUSING	(a)Housing Trailor Parks	2,000	427 (I) (v)	538 688	405 638	542 794	468 (I) 718 (v)	776 (I) 1,084 (v)
RODENT & VECTOR CONTROL	(a)No Date - This function is included in inspection data for a wide variety of establishments; e.g. housing, solid waste disposal, salvage yards, industrial plants and complaints.							

NOTE: Where there is a (v) = Visits; (s) = Samples; (I) = Inspections and * = 11 Month Period

Table 3 shows the relationship between visits, test and samples as to the number and manhours spent from the years 1969-1980.

TABLE 3

YEAR	VISITS	TOTAL MANHOURS ON VISITS	MANHOURS PER VISIT	TESTS	TOTAL MAN-HOURS ON TESTS	MANHOURS PER TESTS
1969	38,615	17,963	28 min.	11,862	1,108	5 min.
1970	41,214	20,636	30 min.	13,652	1,124	5 min.
1971	46,327	23,202	30 min.	17,911	2,021	7 min.
1972	46,110	23,463	30 min.	22,274	2,350	6 min.
1973	54,188	21,629	24 min.	30,809	5,808	11 min.
1974	57,138	22,158	23 min.	37,492	7,185	12 min.
1975	55,090	23,297	25 min.	43,550	8,098	11 min.
1976	64,594	27,753	23 min.	48,212	8,874	11 min.
1977	74,447	28,857	23 min.	58,312	9,915	10 min.
1978 *	79,678	30,932	23.4 min.	70,531	12,360	10 min.
1979	65,957	26,617	24.0 min.	62,633	10,228	9.6 min.
1980	81,537	33,600	24.6 min.	81,254	12,556	9.3 min.
% Increase						
1969-75	+41.5%	+29.4%		+270%	+700%	
1975-76	+17.3%	+19%		+10%	+9.7%	
1976-77	+15.3%	+4.0%		+21%	+11.6%	
1977-78	+35.2%	+23.8%		+33.5%	+22.4%	
1978-79	+7%	+7.2%		+21%	+24.6%	
1979-80	-17%	-14%		-11%	-17%	
1980	+23.6%	+26.2%		+29.7%	+22.8%	

Table 4 in this section shows the relative increase in the program where most of our activity is centered from the year 1970 until the end of 1975 and the increase in those programs between the years 1975-80 and the decrease in 1979, and marked increase for 1980.

* Prorated to indicate 12 months

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TABLE 4

OPERATIONAL PROGRAMS

PROGRAM	AVERAGE INCREASE						ACTIVITY
	1970-75	1975-76	1976-77	1977-78 *	1978-79	1980	
1. Sewerage	+81%	+7%	-5.6%	+3.1%	-5.8%	+3.4%	(a) Bldg. Inspection Pvt. Sewage Disposal
	+500%	+2%	-16.4%	+32.0%	-22.3%	-.95%	(b) Percolation Tests
2. Food Sanitation	+76%	+29%	+37.6%	+5.4%	-20.6%	+47.0%	(a) Inspect. of Eating Establishments
	+300%	+60%	+38.9%	-12.0%	-17.6%	+29.5%	(b) Bacteriological Sampling of Utensils & Food preparation areas
	+27.4%	+13%	+17.4%	+3.0%	-24.5%		(c) Inspection of Foodshops
3. Schools	+35%	+27%	+4.4%	+6.0%	-2.9%	+69.0%	(a) Inspections
4. Public Water		+15.4%	+45.1%	+5.0%	-17.7%	+15.9%	(a) Sampling

* Prorated to indicate 12 months

TABLE 5

PUBLIC HEALTH INSPECTION PROGRAM
PROVINCE OF NOVA SCOTIA
1980

ESTABLISH	ATLANTIC		C.B.N.		C.B.S.		COBEQUID		FUNDY		LUNEN-Q		NORTH		WESTERN		PROVINCE	
GENERAL	Time	%	Time	%	Time	%	Time	%	Time	%	Time	%	Time	%	Time	%	Time	%
SAMPLES	2063	5.2	1903	14.0	1796	12.5	1032	9.2	986	8.0	856	7.6	1442	14.9	913	11.6	10988	9.2
TESTS	2938	7.5	1605	11.8	1559	10.8	1659	14.7	995	8.0	1536	13.6	1521	15.7	744	9.4	12556	10.5
TRAVEL	6901	17.6	2319	17.1	2526	17.6	1934	17.2	2074	16.8	1823	16.2	1745	18.0	1311	16.7	20631	17.3
COURT	74	.1										.1					100	.1
VISITS	2211	31.2	4065	30.1	3933	27.4	2978	26.5	3287	26.7	3411	30.3	1631	16.8	2085	26.6	33600	28.1
ADMIN.	7535	19.2	1147	8.4	1262	18.7	1357	12.0	2762	22.4	1004	8.9	971	10.0	992	12.6	17029	14.3
X-RAYS			5														5	
E.H.S.																		
COMPLS	949	2.4	557	4.1	481	3.3	229	2.0	115	.9	374	3.3	93	.9	53	.6	2850	2.4
EDUCATION																		
SELF	1100	2.8	373	2.7	403	2.8	290	3.4	284	2.3	656	5.8	410	4.2	734	9.3	4350	3.7
GROUP	608	1.5	99	.7	189	1.3	149	1.3	199	1.6	125	1.1	60	.6	30	.3	1458	1.2
COMMUNITY	932	2.3	144	1.0	162	1.1	109	.9	5		104	.9	37	.3	7		1500	1.2
INTERVIEWS																		
PERSONAL	207	.5	456	3.3	1088	7.5	560	4.9	729	5.9	434	3.8	496	5.1	400	5.1	4369	3.7
TELEPHONE	2402	6.1	558	4.1	639	4.4	299	2.6	696	5.6	777	6.9	735	7.5	386	4.9	6492	5.4
MEETINGS	1216	3.1	270	2.0	307	2.1	520	4.6	165	1.3	121	1.0	526	5.4	182	2.3	3306	2.9

TABLE 6

COMPARATIVE SUMMARY OF INSPECTIONS
BY HEALTH UNIT

1980

ESTABLISH	ATL	CEN	CBS	COS	FUN	LUN-Q	NORTH	WEST
Eating	4079	1330	1474	1587	971	380	723	484
Food Vend	110			1	4	24		
Sigt Hse		3		2	19	6	2	
School	673	443	390	5[illegible]	257	199	216	444
Food	2691	4[illegible]3	647	111	161	193	3	8
Hair	228	26			6			1
Freezer						1		
Tourist	11	90	32	16	1	14	2	41
Trailer	51	3	12	10		2	3	3
Homes	51	10	6	68	6	8	1	3
Housing	337	175	105	13	50	1	4	7
Hosp.	12	18	24	16		3	1	70
Bldg.	2302	996	1026	1147	1445	1527	1169	1043
Garb. Dis.	95	139	194	40	25	38	105	57
Swimming	293	230	112	92	29	74	35	44
Camp	11	71	29	62	87	21	23	25
Salvage		16	1	3	6	16	5	10
Parade	1	29	15	22	12	21	16	9
Pub. Water	572	233	134	744	154	303	133	207
Pvt. Water	550	475	448	438	94	118	193	627
M.H.P.	19	35	223	7	43	9	83	69
Pub. Course	27	108	17	22	1	10	48	13
Pest.	38	105	6	39	50	55	67	46
Food Proc.	20		22	19				2
Beverage	12	7						1
Meat Proc.		6			2	10	2	
Indust.	4	8	1	19		5		2
Bum Camp	1	3	6	1	5	9	3	6
Const.	1		1	1				
Pvt. Sewage	1360	603	573	736	565	414	448	535
Pub. Sewage	48	64	35	1	6	5		21
S.T.P.	661	142	335	62	282	245	89	77
Collection	4	46	4	1	2		66	11
Complaint	1150	625	458	372	314	397	231	166
Air Pollu	17	7	1			7	2	10
Not Found	10	2	1	3				11
Comm. Dis.	20		1	2	2	19		3
Pest Control	88	109	44	9	3	10	5	2
Other	71	4	31	41	43	9	17	88
TOTAL	15662	4911	6413	6072	4645	4153	3695	4126

PUBLIC HEALTH INSPECTION

SAMPLES, TESTS, INSPECTIONS — TABLE 7 — 1980 — PROVINCIAL

ESTABLISH.	INSP	Samples						Tests									VISITS
		WATER	BOD	SWAB	DAIRY	SEWAGE	OTHER	PERC	RESIDUAL	LIGHT	DYE	PH	TEMP	FLUO	OTHER		
EATING	11494	1833	*	7538	279	*	46	*	*	2304	5	*	18176	*	140		13422
FOOD VEND	139		*			*		*	*	*	*	*	78	*	7		152
SLGT HSE	32	54	*		*	*		*	*	*		*		*			62
SCHOOL	3140	3547	*	*	1	*	203	6	756	5019	6	*	180	*	58		5468
FOOD	4237	383	*	6	1177	*	4	*	*	460	2	*	6050	*	4		5234
HAIR	262	2	*	*	*	*	114	*	*	11	*	*	*	*			295
FREEZER	1		*	*		*		*	*			*		*			1
TOURIST	214	719	*	*	*	*			111	*	14	*	*	*	5		733
TRAILER	84	274	*	*	*	*			6	*		*	*	*	2		292
HOMES	153	198	*	61	*	*	3		*	10		*	*	*	69		283
HOUSING	692	79	*	*	*	*	25	*	*	2	3	*	*	*	3		792
HOSPITAL	144	255	*	149	473	*	6	*	185	5		*	98	*			470
BUILDING	10655	27	*	*	*	*	23	20700	*	*	*	*	*	*	356		12453
GARB DIS	693	30	*	*	*	*		4	*	*		*	*	*			717
SWIMMING	909	2373	*	*	*	*	2	*	2372	*	*	1414	*	*	41		1535
CAMP	329	625	*	*	*	*		16	42	*	1	*	*	*	2		621
SALVAGE	53		*	*	*	*		*	*	*		*	*	*			57
PICNIC	125	269	*	*	*	*			5	*		*	*	*			276
PUB WATER	2577	22265	*	*	*	*	178	*	17914	*	*	617	*	91	64		13156
PVT WATER	2943	7318	*	*	*	*	26	*	460	*	20	55	*	*	11		6588
WTP (1)	468	428	*	*	*	*	2	*	412	*	*	72		146	5		628
WTR COURSE	246	751		*	*	*		*	*	*	2	4	1				625
PASTEUR	451	132	*	32	9235	*	1	*	15		*	3	162	*	2		1355
FOOD PROC	68	31			*	*	21	*	14	11		*	32	*			78
BEVERAGE	20		*		*	*		*			*		*	*	1		20
MEAT PROC	20	17			*	*	3	*	*	2		*	16	*	21		26
INDUST	45	404		*	*	*		*	368					*	10		249
SUM CAMP	34	51	*		*	*			1			*	1	*	1		51
CONST	4	1	*		*	*						*		*			5
PVT SEWAGE	5184	*	10	*	*	21	1	148	*	*	459	*	*	*	28		5994
PUB SEWAGE	180	*	3	*	*	13			3	*	31	*	*	*	9		221
STP (2)	1893	*	1847	*	*	1252	234		901	*	9	95		*	19		2142
COLLECTION	134	*	38	*	*	15			*	*	4			*			161
COMPLAINT	3713	137	1			6	72	16	12	18	161	3	4	*	14		4109
AIR POLL	44	*	*	*	*	*	23	*	*	*	*	*	*	*	3		47
NOT FOUND	27	*	*	*	*	*		*	*	*	*	*	*	*			218
COMM DIS	47		*				23	*		*		*	1	*			471
PEST CONT	270		*	*	*	*	8	*	*	*		*	*	*			333
OTHER	314	58		16	2		40		22	13	2	1	17		4		888
SUB TOTAL	52038	42261	1899	7802	11167	1307	1063	20890	23599	7855	719	2264	24815	237	875		81537
TOTAL	52038	65499					81254										81537

*No Cross Reference
WTP (1) - Water Treatment Plant
STP (2) - Sewage Treatment Plant

SECTION V

WATER SUPPLIES

An important portion of the Division's responsibilities are associated with water supplies. The activities include sampling of water supplies for chemical and bacterial quality, advising individuals of municipalities concerning quality problems and review of plans for new water projects. Water supplies which are covered include municipal, private, schools, restaurants, campgrounds, trailer parks and subdivisions.

BACTERIOLOGICAL SAMPLING (Table 8)

Municipal water supplies accounted for a total of 16,910 water samples in 1980. This is comparable to 1979 figure of 16,808 samples. A total of 42,261 samples from all sources were collected by the inspectors as compared to 37,057 in 1979. There were about 78 different municipal supplies sampled on a regular basis. (a) Chlorinated Supplies: 93% of the municipal supplies practice chlorination. In 1980, 93% of samples taken from chlorinated supplies were negative of coliform organisms. This is an improvement over the 1979 percentage.

Percentage of samples negative for coliform organisms per year:

YEAR	PERCENTAGE
1980	93.0
1979	89.0
1978	91.0
1977	86.8
1976	94.3
1975	93.4
1974	89.9
1973	89.6
1972	88.3

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(b) Unchlorinated Supplies: The percentage of samples negative for coliform organism in unchlorinated systems was 93%. In 1979, 90% were negative.

(c) General: A disturbing point to notice is that only 70% of the municipal supplies had over 90% of the samples taken show no coliform organisms. The maximum permissible limit, according to the Canadian Drinking Water Guidelines is at least 90% negative samples in any consecutive 30 day period. Figures as reported on the years average are misleading,as in the majority of cases bad samples are reported in the month of June, July and August, and even surface sources have low or no coliform counts in the colder months. This poor record in the warmer months, would tend to indicate that when there is a significant bacteria count in the source, many of our systems are not capable of eliminating it.

CHEMICAL SAMPLING

All municipal supplies, both raw and treated, were once again sampled for chemical quality in 1980, as well as numerous samples related to specific problems. Some changes have been made to the format of the chemical quality tubulation in an effort to make it a more useful reference, but further improvement is necessary. Results of this sampling program are available, on request, to interested parties.

MUNICIPAL WATER DEVELOPMENT

In 1975, there were 131 Joint Certificates of Approval recommended for projects involving water systems. In 1976, this figure dropped to 90, in 1977 it was 82, in 1978 it was 88, in 1979 it was 113, and in 1980 it was only 75.

A breakdown by region is as follows:

Cape Breton	26
Antigonish, Guysborough, Pictou Colchester, Cumberland Counties	11
Atlantic Health Unit (Halifax County)	25
Hants, Lunenburg, Kings, Annapolis Queens, Digby, Yarmouth, Shelburne Counties	8

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URANIUM

A Uranium Task Force was formed in 1979, following the discovery of uranium in groundwater in the Harrietsfield area of Halifax County. The task force met several times during 1980, and began it's investigation after terms of reference and a proposed investigation program were approved. The presence and significance of uranium and the related elements radon-222 and radium-226 are being investigated. The following aspects of the investigation were started in 1980.

- an extensive technical literature search (being carried out by MRMS);
- developing and perfecting the technique for radon sampling and analysis in cooperation with the University of Texas;
- background sampling of a few wells and springs in the Falls Lake area of Hants County where uranium exploration is being carried out;
- a study to determine whether or not uranium and related elements vary in concentration with time in a given well;
- a proposal to purchase an emissions counter for the lab to be used in the analysis of water samples for radium-226;
- the sampling of all municipal water systems in the province for uranium and related elements; and
- a sampling survey of wells located in the Harrietsfield-Williamswood area of Halifax County.

A research assistant was hired to work with the uranium task force for a temporary period.

HIGHLIGHTS OF WATER SUPPLY PROGRAM

- The Petit-de-Grat water supply system and treatment plant were successfully completed and are now operational.
- Renovation of the water treatment plant at Louisbourg is being contemplated.

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- An alternate (stand-by) chlorinator was installed in the Point Edward water treatment plant.
- City of Sydney carried out extensive improvements to it's distribution system.
- An intensive sampling program for collecting water quality information on Pottle's Lake is in progress at present.
- A filtration and chlorination system was installed in Fernleigh Park, a chlorination and chlorine contact tank facility was installed for the wells which had been causing bacterial problems at Alderwood Trailer Court and a chlorination facility was installed at Maplewood Subdivision.
- Work was completed on the installation of a new reservoir for the Town of Bridgewater. It is hoped that this would improve the pressure problem in certain areas of the town.
- Thorough flushing and cleaning of certain waterlines was carried out in the Town of Liverpool. This had considerable effect on the quality of water.
- A new waterline was installed on School Street in the Town of Liverpool. This would help in proper circulation of water to the hospital and meet Fire Marshall's requirements.
- Some of the waterlines were replaced to improve quality of water in certain sections of the Town of Mahone Bay.
- A new fluoride machine was installed in the Town of Liverpool.
- Guidelines were issued for Minamkeak Lake Protected Water area.
- Design work began on the construction of a new transmission line to service the Town of Yarmouth. The work would include installation of a trunk watermain, pumphouse, new treatment facilities and two standpipes

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- New waterlines were installed as Phase 1 of the project in the Town of Shelburne. Phase I was primarily constructed to service a new Fish Plant and included a new standpipe. Phase II would include a new trunk watermain along with a new treatment plant. Preozonation along with post chlorination may be used as a part of the treatment process.
- Town of Digby engaged the services of a consultant to upgrade their water supply. A new covered reservoir has been designed by the consultants as Phase I of the overall upgrading. Phase II would include development of new wells, upgrading of chlorine facilities and removal of certain older watermains.
- A new well was drilled to supplement the water supply in the Town of Annapolis Royal.
- A water study was completed for the Community of Nictaux.
- After continuous operational problems, the fluoride machine was switched off in the Town of Middleton.
- A brochure containing useful information for those who wish to utilize the rain water caught on their homes for drinking purposes has been completed and is going to be printed soon.

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TABLE 8

RESULTS OF LABORATORY EXAMINATIONS OF

MUNICIPAL WATER SUPPLIES

PROVINCIAL HEALTH UNIT

1980

MUNICIPALITY	NUMBER OF SAMPLES TAKEN	NEGATIVE FOR COLIFORM ORGANISMS	
		NO.	%
Provincial Total	16,910	15,738	93
Chlorinated	16,630	15,474	93
Unchlorinated	280	264	94

TABLE 8

RESULTS OF LABORATORY EXAMINATIONS OF

MUNICIPAL WATER SUPPLIES

ATLANTIC HEALTH UNIT

1980

MUNICIPALITY	NUMBER OF SAMPLES TAKEN	NEGATIVE FOR COLIFORM ORGANISMS	
		NO.	%
City of Halifax *	3,056	2,988	98
City of Dartmouth *	2,478	2,431	98
(Includes some areas			
of Halifax County			
served by Dartmouth			
water system)			
County of Halifax -			
Long Lake - North	40	39	98
Preston			
Bedford - Sackville *	325	316	97

* Fluoridated

TABLE 8

RESULTS OF LABORATORY EXAMINATIONS OF

MUNICIPAL WATER SUPPLIES

CAPE BRETON NORTH HEALTH UNIT

1980

MUNICIPALITY	NUMBER OF SAMPLES TAKEN	NEGATIVE FOR COLIFORM ORGANISMS	
		NO.	%
Baddeck	238	178	75
Dingwall	24	17	71
Eskasoni	84	49	58
Northside	378	364	96
Point Edward	108	96	89
Steel Company	285	279	98
Sydney *	488	474	97

* Fluoridated

TABLE 8

RESULTS OF LABORATORY EXAMINATIONS OF

MUNICIPAL WATER SUPPLIES

CAPE BRETON SOUTH HEALTH UNIT

1980

MUNICIPALITY	NUMBER OF SAMPLES TAKEN	NEGATIVE FOR COLIFORM ORGANISMS	
		NO.	%
Judique	130	96	74
Port Hood	118	116	98
Mabou	148	93	63
Inverness	153	120	78
Port Hawkesbury *	242	239	99
Orangedale **	61	52	85
St. Peter's	70	56	80
Louisdale	72	66	92
Arichat	83	68	82
Donkin	94	85	90
Birch Grove	108	97	91
Glace Bay *	384	369	96
Dominion *	48	45	94
Reserve *	48	46	96
New Waterford *	265	259	98
Sydney River	124	123	99
Louisbourg	197	190	96
Grand Lake Road	41	39	95

* Fluoridated
** Unchlorinated

TABLE 8

RESULTS OF LABORATORY EXAMINATIONS OF

MUNICIPAL WATER SUPPLIES

COBEQUID HEALTH UNIT

1980

MUNICIPALITY	NUMBER OF SAMPLES TAKEN	NEGATIVE FOR COLIFORM ORGANISMS	
		NO.	%
Truro	247	235	95
Tatamagouche	122	96	79
Stewiacke	129	108	84
Amherst	223	214	96
Parrsboro	135	116	86
Springhill	115	112	97
Oxford	166	161	97

* Fluoridated

TABLE 6

RESULTS OF LABORATORY EXAMINATIONS OF

MUNICIPAL WATER SUPPLIES

FUNDY HEALTH UNIT

1980

MUNICIPALITY	NUMBER OF SAMPLES TAKEN	NEGATIVE FOR COLIFORM ORGANISMS	
		NO.	%
Annapolis Royal	93	93	100
Bridgetown	107	96	90
Canning **	91	86	95
Elmsdale	54	54	100
Enfield *	51	47	92
Falmouth	52	47	90
Granville Ferry **	39	39	100
Greenwood Village	33	33	100
Hantsport *	43	43	100
Kentville *	133	109	82
Lantz	57	50	88
Lawrencetown	60	55	92
Margaretsville	42	38	91
Middleton *	182	176	97
New Minas	46	44	96
Port Williams **	89	87	98
Shubenacadie	51	50	98
Windsor *	91	87	96
Wolfville *	93	88	95

* Fluoridated
** Unchlorinated

TABLE 8

RESULTS OF LABORATORY EXAMINATIONS OF

MUNICIPAL WATER SUPPLIES

LUNENBURG-QUEENS HEALTH UNIT

1980

MUNICIPALITY	NUMBER OF SAMPLES TAKEN	NEGATIVE FOR COLIFORM ORGANISMS	
		NO.	%
Bridgewater	241	222	92
Liverpool *	355	341	96
Lunenburg *	232	212	91
Mahone Bay	184	178	96
Bowater Mersey	123	120	97
C.F.S. Mill Cove	45	43	95

* Fluoridated

TABLE 8

RESULTS OF LABORATORY EXAMINATIONS OF

MUNICIPAL WATER SUPPLIES

NORTHUMBERLAND HEALTH UNIT

1980

MUNICIPALITY	NUMBER OF SAMPLES TAKEN	NEGATIVE FOR COLIFORM ORGANISMS	
		NO.	%
Antigonish	637	520	82
Canso	164	138	84
Lower South River	48	48	100
Mulgrave	165	135	82
New Glasgow *	261	251	96
Pictou	429	366	85
Sherbrooke	135	125	93
St. Andrews	170	145	85
Stellarton	149	138	93
Trenton	228	207	91
Westville	149	130	87

* Fluoridated

TABLE 8

RESULTS OF LABORATORY EXAMINATIONS OF

MUNICIPAL WATER SUPPLIES

WESTERN HEALTH UNIT

1980

MUNICIPALITY	NUMBER OF SAMPLES TAKEN	NEGATIVE FOR COLIFORM ORGANISMS	
		NO.	%
Digby	180	138	77
Yarmouth	433	402	93
Rodney Lake	148	125	84

* Fluoridated

SECTION VI

SEWERAGE

1. PRIVATE SEWAGE DISPOSAL

Private sewage disposal includes all sewage disposal systems with the exception of sewage treatment plants, which serve individual domestic, commercial, industrial, and institutional establishments such as private homes, schools, trailers, campgrounds, and motels. Most of the inspections of private sewage disposal systems are associated with final inspections of septic tank systems serving private homes and other establishments, while a few are related to investigations and surveys of existing systems in response to complaints. The number of building lot inspections exceeds the number of private sewage disposal inspections because several inspections may be necessary to evaluate any one application and not all systems receive final inspection.

Table 9 indicates the number of inspections and lot assessments carried out during the period 1969 to 1980.

TABLE 9

YEAR	BLDG. LOT INSPECTION	% CHANGE	PVT. SEWAGE DISPOSAL	% CHANGE	PERC TESTS	% CHANGE
1969	4,676	-	2,449	-	2,081	-
1970	6,314	+35	2,868	+17	3,586	+72
1971	7,827	+25	3,416	+19	5,721	+60
1972	7,713	- 1	3,748	+10	8,334	+46
1973	9,496	+23	4,502	+23	16,347	+96
1974	10,208	+7.5	4,793	+6.5	18,408	+12
1975	13,398	+31	5,583	+16	23,858	+30
1976	12,372	- 8	5,764	+ 3	24,456	+ 3
1977	11,100	-10	6,016	+ 4	20,204	-17
1978 *	13,580	+22	5,115	-15	24,503	+32
1979	10,455	-23	4,862	- 5	21,140	-14
1980	10,655	+1.9	5,184	+6.2	20,890	-1.2

* Prorated to include 12 months

As can be seen from the above table, the building lot inspections and percolation tests remained almost the same during 1980. This may be due to the general economic conditions that prevailed during 1980.

Large subdivisions serviced by individual wells and septic tank disposal systems are of particular concern to this division. Even if each individual lot is inspected and found suitable for the installation of a septic tank disposal system, the number and concentration of systems in a subdivision is such that the ground may become saturated with sewage effluent and individual wells may be affected.

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If servicing of subdivisions by individual wells and private sewage disposal systems is to be permitted in the future, large lot sizes and more preliminary planning and soil investigation will be necessary, if problems are to be avoided.

Several items which are of concern in the future to effectively control installation of private sewage disposal systems were mentioned in the 1979 Report and are discussed, here, to record the progress made.

(a) Subdivision Assessment and Regulation

In the 1979 Annual Report, the process of subdivision assessment was discussed and the need for formalization of subdivision assessment process was emphasized.

Considerable progress has since been made. It was decided that a set of regulations be drafted for subdivisions and these would undergo the usual process of approval and would be adopted under the Health Act.

The Division of Public Health Engineering is,at the present time, engaged in preparing an acceptable draft of the Subdivision Regulations and it is expected that this task will be finished within a few months.

(b) Provincial On-Site Sewage Disposal Regulations

As discussed in the 1979 Annual Report, a comprehensive review of the On-Site Sewage Disposal Regulations was carried out and the regulations amended to incorporate the recommendations made by the consultant. A revised copy (1980) of these regulations is now available.

(c) A brochure entitled "Rural Septic Tank Sewage Disposal Systems" has now been revised to reflect all the changes made to the On-Site Sewage Disposal Regulations. The brochure is being reprinted with revisions.

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2. JOINT CERTIFICATES OF APPROVAL

The Division of Public Health Engineering reviews plans and makes recommendations to the Minister of Health, relative to the public health aspect of all water and sewerage projects submitted for Joint Approval of the Department of Health and the Department of Environment.

Of 123 applications recommended by the division for Joint Approval during 1980, 48 involved "sewerage only", while 19 involved a combination of "water and sewerage", with the remaining 56 involving only "water". A breakdown, by Health Unit, of all projects involving water and sewerage is as follows:

TABLE 10

JOINT CERTIFICATES OF APPROVAL FOR 1980

HEALTH UNIT	WATER	SEWER	BOTH	TOTAL
ATLANTIC	17	26	8	51
CAPE BRETON NORTH	16	3	2	21
CAPE BRETON SOUTH	7	3	1	11
COBEQUID	4	7	1	12
FUNDY	5	4	3	12
LUNENBURG-QUEENS	3	3	2	8
NORTHUMBERLAND	4	1	2	7
WESTERN	0	1	0	1
TOTAL	56	48	19	123

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During 1980, considerable follow-up inspections on these projects by Regional Public Health Engineers, in coordination with the local Public Health Inspectors and Health Unit staff, were carried out.

It may be noted that there has been a drastic drop in the processing of these applications, over 1980 - 123 compared to 179 in 1979 - a drop of 31%.

3. SEWAGE TREATMENT PLANTS

There are over 300 sewage treatment plants in Nova Scotia, most of which are small package plants, privately owned and operated. During 1980, 1,890 inspections of sewage treatment plants were carried out. Sampling included 1,915 (ODI) samples and 1,252 coliform samples. In addition, 901 chlorine residual tests were completed.

Coverage of this program in 1980 was more than that provided during 1979. This increase is largely due to increased coverage in Atlantic, Fundy, Lunenburg-Queens and Cape Breton South Health Units. However, greater emphasis on this program should be continued in 1981 to upgrade performance of these plants.

TABLE II

HEALTH UNIT	INSP 1980	ODI & BOD SAMPLES 1980	CL. RESIDUAL TESTS 1980	COLIFORM SAMPLES 1980
ATLANTIC	661	377	137	317
CAPE BRETON NORTH	142	173	52	88
CAPE BRETON SOUTH	335	437	205	223
COBEQUID	62	73	36	44
FUNDY	282	303	191	210
LUN.-QUEENS	242	326	192	241
NORTHUMBERLAND	89	99	76	69
WESTERN	77	127	12	60
TOTAL	1,890	1,915	901	1,252

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TABLE 12

PUBLIC HEALTH INSPECTION
SEWAGE TREATMENT PLANTS
PROVINCE OF NOVA SCOTIA

1980

	# OF PLANTS	ODI/BOD GREATER THAN 50 mg/l		CHLORINE RESIDUAL LESS THAN 0.5 ppm		COLIFORM GREATER THAN 5000/100 ml		PLANT OPERATION AND MAINTENANCE **	
SIZE IN GPD *	a	#	%	#	%	#	%	# UNSATISFACTORY	% SATISFACTORY
Under 5,000	40	30	75	16	40	26	65	15	15
5,000 - 10,000	9	3	33	3	33	6	66	2	4
10,001 - 25,000	19	13	68	9	47	17	89	7	5
25,001 - 50,000	21	15	71	15	71	18	85	9	10
50,001 -100,000	15	10	66	11	73	14	93	5	8
Over 100,000	19	11	58	8	42	12	63	3	15
TOTALS	123	82	67	62	50	93	76	41	57

* - US Gallons Per Day
** - Subjective assessment of plant operation & maintenance to be on the basis of monthly inspection reports

a - Report only sample results of plants which were sampled & inspected at least 4 times during the year
- Number of sewage treatment plants

Table 12 summarizes sample and test results and includes a subjective assessment of operation and maintenance for all sewage treatment plants inspected at least 4 times during 1980 in Nova Scotia. 123 sewage treatment plants are reported and most of the plants are small package sewage treatment plants which are highly dependent on proper operation and maintenance to produce satisfactory results. A breakdown of the data by Health Unit is not included, as this information is reported in separate Health Unit Annual reports.

Based on the Division of Public Health Engineering "guidelines" used for evaluating and assessing the operation of sewage treatment plants, it is apparent that the operation and the results produced by these plants are deplorable. 67% of 123 plants reported exceeded the guidelines for effluent BOD (ODI); 50% did not meet the guidlines for chlorine residual; and 76% exceeded the guidelines for total coliforms in the treated effluent. In many cases, the data on plants was not available, therefore, these percentages only are based on available information.

The need for full time, qualified operators was very evident during 1980, as in the past. Training courses for certification of operators were offered by the Department of Environment.

Sometime in the future, mandatory certification of operators should be required so that any person or municipality installing sewage treatment plants should then be required to have a certified operator responsible for the operation and maintenance of the plant.

It is intended to continue the discussion initiated in 1977 between the Department of Health and the Department of Environment concerning these issues. This continued dialogue would, hopefully result in definite recommendations on all aspects of municipal wastewater disposal.

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HIGHLIGHTS OF SEWAGE COLLECTION AND TREATMENT PROGRAM

This program made up a large part of the workload for inspectors and engineers.

1. A new sewerage system with sewage treatment plant was completed for the Village of Petit-de-Grat. This sewage treatment plant is performing satisfactorily.
2. A consultant is preparing designs for a new sewage treatment plant for the College of Cape Breton and Tanglewood Subdivision.
3. There was a considerable controversy over the performance of Chester Acres sewage treatment plant. Department of Health has made certain specific recommendations to correct this situation.
4. The sewage treatment plant in Lockeport was put to operation.
5. The sewage treatment plant in Shelburne was also put to operation and there were some minor problems with the freezing of clarifier and chlorination.
6. Department of Health recommended Waterville sewage treatment plant for the sewage disposal from the new Michelin plant.
7. Consultants undertook a study on the Lawrencetown sewage collection and treatment system.
8. Upon recommendations from the Department of Health, the school system at Cambridge, Kings County was connected to the Waterville sewage treatment plant. The installation of this sewage collection line, also provided services for residents in the Cambridge area which was previously unserviced.

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SECTION VII

MILK AND DAIRY PRODUCTS

Ten pasteurization plants were in operation in the province during 1980, but as in 1976 to 1980, most of the volume was produced by four major processors.

Fifteen milk and milk product depots served the province in addition to the parent plants. These depots distribute products from the large processors.

There were five major manufacturers of ice cream and a number of distributors from outside the province retailing the ice cream and ice cream products in Nova Scotia during the past year. Three processors also marketed milkshakes, milkshake mixes, iced milk, etc., within the province.

Four hundred and fifty-one pasteurization plant inspections were carried out during theyear, an increase of 85 over 1979.

The comparative figures for inspections per Health Unit and Province for the years 1974-75-76-77-78-79-80 are shown in the following table.

TABLE 13

PASTEURIZING PLANT INSPECTIONS

YEAR	PROV.	ATL.	CBN.	CBS.	COB.	FUN.	LUN-Q.	NORTH.	WEST.
1974	335	28	109	9	21	21	30	76	1
1975	241	9	86	13	7	47	24	48	7
1976	347	37	138	6	22	47	23	60	14
1977	402	38	164	11	21	57	23	87	1
1978	428	76	124	12	23	49	33	100	11
1979	366	64	111	7	7	43	42	69	23
1980	451	83	105	6	39	50	55	67	46

The total number of milk and milk product samples collected for 1980 was 11,167, an increase of 2,653 over 1979.

The sampling of ice cream to include various mixes and milkshakes decreased by 64 over 1979, for a total of 642 samples. The monitoring of milk for vitamin content continued during 1980, and we are pleased to note that all plants are now staying well within the limits as to vitamin content. Our Department works closely with the Health Protection Branch of National Health and Welfare in the surveillance of milk products which include hard ice cream, various iced milks and milkshakes. We are also working in liaison to insure the correct amount of vitamin "A" and "D" is maintained in the milk supply particularly in skim, 1% and 2%, and chocolate milk.

The number of samples collected for each year from 1974 to 1980 and frequency within plants are as follows for the Provincial total and the Health Units.

TABLE 14

TOTAL NUMBER OF MILK AND MILK PRODUCT SAMPLES

YEAR	PROV.	ATL.	CBN.	CBS.	COB.	FUN.	LUN-Q.	NORTH.	WEST.
1974	8533	3029	1135	316	1308	1343	555	744	103
1975	6558	2430	859	251	828	1163	256	646	129
1976	8484	3152	1349	291	1145	1145	293	832	201
1977	9262	3050	1908	303	1291	1109	474	950	173
1978	9384	3338	1938	305	719	1368	391	1115	204
1979	8514	3005	1667	237	686	1106	343	1136	154
1980	11167	3565	2461	254	1067	1300	478	1349	694

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TABLE 15

FREQUENCY WITHIN PLANT

YEAR	PROV.	ATL.	CBN.	CBS.	COB.	FUN.	LUN-Q.	NORTH.	WEST.
1974	1292	410	290	80	151	148	6	111	22
1975	950	306	245	49	93	114	39	50	19
1976	1287	420	381	46	131	126	41	103	39
1977	1358	313	469	61	129	160	59	133	34
1978	1179	167	448	62	88	181	45	140	48
1979	1095	143	419	52	78	178	43	115	67
1980	1355	175	526	48	111	207	55	119	114

QUALITY

The bacteriological quality of milk and cream showed continued improvement over the past year. Approximately 11.9% of all milk and milk products shown in Table 18, showed a coliform count of <20/100 ml, as opposed to 14.6% in 1980,14.6% in 1979, 18.5% in 1978, 20.4% in 1977, 21.9% in 1976 and 31% in 1974.

Most processors had a distinct increase in the quality of their products while a few had minor problems at intervals in isolating post pasteurization contamination.

The standard plant count for both the raw and pasteurized milk remained very low throughout the year. Table 18 reflects the sampling programs as to the number of samples of various products, the coliform content, the efficiency of pasteurization, as indicated by the number below 80 micrograms of Phenol/ml. and the standard plate count which has an allowable maximum of 30,000 colonies per ml.

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The following table indicates the bacteriological quality of ice cream, both hard and soft varieties and quality of milkshakes analysed throughout the Province during the year.

The quality of our ice cream remained somewhat the same as during the year 1979, as indicated in Table 16. Unfortunately, there was some deterioration insofar as plate count content is concerned, but a decrease in coliform counts indicated improved quality.

Some difficulty is still being experienced in local establishments with cleaning and sanitizing utensils, thereby yielding poor results.

TABLE 16

RESULTS OF EXAMINATION OF ICE CREAM

TOTAL NO. OF SAMPLES	# OF COLIFORM >8/GRAM	%	# OF STANDARD PLATE COUNT >50,000/GRAM	%
1976	438	100	23	15	2.9
1977	465	65	13.9	10	2.2
1978	575	124	21.3	42	7.3
1979	446	94	21.0	22	5.0
1980	361	67	18.6	27	7.5

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Results of examination of milkshakes showed an almost 3 fold decrease in post pasteurization contamination which can be further reassuring as to safety of this particular product.

Unfortunately, when milkshakes are prepared in individual food outlets, such as restaurant or at fast food outlets, difficulty is still being experienced because of the poor washing and sanitizing equipment.

TABLE 17

RESULTS OF EXAMINATION OF MILKSHAKES

	TOTAL NO. OF SAMPLES	# OF COLIFORM > 10/GRAM	%	# OF STANDARD PLATE COUNT > 50,000/GRAM	%
1976	41 -	5	12	2	5
1977	289	34	11.7	19	6.5
1978	570	86	15.1	60	5.0
1979	258	39	23.0	15	5.0
1980	281	24	8.5	36	12.8

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TABLE 18

RESULT OF EXAMINATION OF MILK
AND MILK PRODUCTS

PROVINCIAL _____ HEALTH UNIT

1980

MILK AND MILK PRODUCTS EXAMINED	TOTAL NO. OF SAMPLES EXAMINED	SAMPLES WITH COLIFORM TEST GREATER THAN 20/100 ML		SAMPLES WITH PHOSPH. TEST GREATER THAN 80MCG PHEN/ML		SAMPLES WITH STAND. BACT. COUNT OF MORE THAN 30,000/ML	
		#	%	#	%	#	%
MILK	xxxxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
PASTEURIZED							
HOMOGENIZED	1880	140	7.5				
SKIMMED	1427	131	9.1				
PARTIALLY SKIMMED (2%)	1398	129	9.2	1			
OTHER 1% buttermilk	272	35	12.9				
CREAM	xxxxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
LIGHT(incl. blend,coffee and table	717	79	11.0				
HEAVY (whipping)	822	185	22.5				
ICE CREAM	xxxxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
ORDINARY							
SOFT (incl. sherbet & frozen custard)	174	19	10.9				
ICE CREAM BARS							
OTHER	38	10	26.3				
CHOCOLATE AND FLAVOURED MILK	1200	218	18.1	1			
TOTAL	7938	946	11.9	2			

SECTION VIII

RECREATIONAL SANITATION

Recreational Sanitation includes swimming areas, summer camps, picnic areas and camping establishments.

SWIMMING AREAS

TABLE 19

	INSPECTIONS	SAMPLES	TESTS			VISITS
		WATER	RESID	pH	OTHER	
1976	617	2780	1484	966	16	1609
1977	526	2042	1591	1050	29	1458
1978*	575	1934	1423	997	35	1221
1979	639	2147	1614	1959	16	1343
1980	1397	3318	2420	1414	44	2483

*Prorated for 12 months.

The number of samples and visits to swimming areas increased substantially in 1980. The number of inspections also increased during 1980. The necessity of increased surveillance to ensure adequate operation and maintenance is still a priority.

As in former years a number of swimming areas in the province had to be recommended for closure due to bacteriological contamination.

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A province-wide program for monitoring the bacteriological quality of swimming pool water has been in effect since 1977 and a significant improvement in the bacteriological quality of water has been observed since the start of this program.

PICNIC AREAS AND SUMMER CAMPS

TABLE 20

	INSPECTIONS	SAMPLES		TESTS			VISITS
		WATER	OTHER	RESID	PERC	OTHER	
1976	79	178	---		--		192
1977	87	178	2		1		203
1978*	123	253	---		--		286
1979	118	300	---		23		306
1980	159	320	---	6	--	1	327

* Prorated to include 12 months

Visits and sampling showed an increase from 1979 which is in keeping with the recommendation made last year regarding increase in the amount of time spent at these establishments.

CAMPGROUNDS

TABLE 21

	INSPECTIONS	SAMPLES	TESTS			VISITS
		WATER	PERC	RESID	OTHER	
1976	269	455	22	24	2	466
1977	308	639	9	198	-	621
1978*	251	545	26	15	6	562
1979	285	761	13	30	15	566
1980	329	625	16	42	2	621

* Prorated to include 12 months

Inspections and sampling to campgrounds increased over 1979, which represents an increase in manhours spent at these establishments.

The whole recreational sanitation program has shown an improvement over the past two years and it is hoped that this important area will continue to get its due importance in the future by increased use of the summer staff.

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SECTION IX

SOLID WASTE DISPOSAL

Sanitary landfilling continues to be the most practical solution to solid waste disposal in the Province. However, for various reasons landfill location and operation are still a very controversial subject. It is highly unlikely that in the near future it will be possible to locate a landfill operation anywhere in the Province that will not result in a public outcry. The elimination of the association of the open dump with a sanitary landfill and the acceptable operation of existing landfill sites will be necessary before this method of solid waste disposal gains public acceptance.

A summary of solid waste management activities within the province for 1980 is as follows:

1. DEVCO proposal for the disposal of fine tailings near Kilkenny Lake was referred to the Environmental Control Council. A public meeting was arranged to hear arguments for and against the proposal and finally, the proposal was favourably recommended by the ECC, Departments of Health and Environment, provided that the stipulations were to be adhered to.

2. The Municipality of Lunenburg is looking at a central location for the disposal of septic tank wastes.

3. The Town of Yarmouth started using their new landfilling site but some problems were encountered regarding amount of cover material as well as the high water table.

4. Operational problems were still experienced in the sludge disposal site in Waldec, Annapolis County.

5. There was much public controversy over a proposed landfilling site in Annapolis County.

Other forms of solid waste disposal such as incineration, recycling, etc. are receiving continuing scrutiny by the Division of Public Health Engineering, but as yet do not appear to be suited to or economical for Nova Scotia on a general basis.

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SECTION X

FOOD SANITATION

The following tables show the main activities carried out in the area of food sanitation during the year 1980 and shows a comparison by Health Unit and on a Provincial basis for years 1974 - 1980.

Table 22

EATING ESTABLISHMENT INSPECTIONS

YEAR	ATL.	CBN	CBS	COB.	FUN.	LUN-Q.	NORTH.	WEST.	PROV.
1974	1730	1040	784	456	306	134	495	262	5267
1975	2040	972	798	501	287	287	487	315	5693
1976	2183	1457	966	585	414	286	562	415	6868
1977	2668	1409	1165	1371	783	468	989	397	9250
1978	2585	1312	1409	1351	720	304	843	422	8946
1979	2435	1123	1214	1005	722	297	610	413	7819
1980	4078	1339	1474	1687	971	380	723	484	11494

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TABLE 23

SWAB TESTS

YEAR	ATL.	CBN	CBS	COB.	FUN.	LUN-Q.	NORTH.	WEST.	PROV.
1974	424	1292	1112	709	476	----	----	----	3695
1975	116	707	1493	671	143	----	120	223	3467
1976	1101	1536	1719	631	397	----	38	422	5900
1977	1566	2015	2901	900	555	----	225	----	8197
1978	273	1771	2750	443	243	----	677	----	6207
1979	310	1721	2267	602	388	----	597	141	6026
1980	132	3319	2210	810	443	7	424	442	7802

TABLE 24

FOODSHOP INSPECTIONS

YEAR	ATL.	CBN	CBS	COB.	FUN.	LUN-Q.	NORTH.	WEST.	PROV.
1974	2064	329	226	13	40	71	3	12	2758
1975	1721	236	186	11	72	147	8	52	2420
1976	1780	403	205	30	103	163	4	24	2712
1977	2062	416	382	7	127	169	--	--	3187
1978	2585	294	527	21	95	126	8	12	3020
1979	1559	252	470	11	99	110	4	2	2507
1980	2691	438	647	111	161	193	3	8	4237

PROVINCIAL

TABLE 25

YEAR	EATING INSPECTIONS	SWAB	FOODSHOP INSPECTIONS
1974	5267	3695	2753
1975	5693	3467	2420
1976	6868	5561	2712
1977	9250	8197	3187
% Increase over 1976	+35%	+47%	+18%
1978*	9751	7243	3474
% Increase over 1977	+5.4%	-11.6%	+9.0%
1979	7819	6026	2507
% Increase over 1978	-20%	-17%	-20%
1980	11494	7802	4237
% Increase over 1979	+45.7%	+29.5%	+69%

* Prorated to indicate 12 months

From the previous table the following comments are applicable on a provincial basis;

(1) There was an approximate 46% increase in the number of inspections of Eating Establishments. (2) There was a 30% increase in the swabbing of utensils and food contact surfaces. (3) There was a decrease of 69% in the number of inspections of foodshops.

Some Health Units are carrying out a well balanced swabbing program of food contact surfaces where lab facilities are available. The exception being the Atlantic Health Unit as indicated in Table 23.

We have not obtained our optimum throughout the province as laboratory facilities were not available for this purpose in four of our Health Units.

Co-operation with the Health Protection Branch (National Health and Welfare) continued as in previous years with monthly meetings held by members of both departments to discuss matters of mutual interest and to exchange information on a continuing basis.

903 foodhandlers received certification throughout most of the Province, (National Sanitation Training Program). This is a very creditable showing, especially in the Atlantic Health Unit where there is a full time educator.

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SECTION XI

SCHOOLS

The Department of Education approves all schools in the Province and in turn, requires approval from the Department of Health for the school plans. To ensure uniformity within the Department, co-operation and approval is the responsibility of the Director, Division of Public Health Engineering. The Director refers the plans to the Regional Engineer who co-ordinates approval at the Health Unit level.

The Division of Public Health Engineering advises the Municipalities and their consultants or architects on matters relating to the construction of new schools, the upgrading of existing schools and relocatable classrooms.

Following is a breakdown of the responsibilities:

(a) SITE APPROVALS

The Regional Public Health Engineer and/or the area Public Health Inspector, through the Health Unit Director, gives advice with respect to site location, water supply and sewage disposal.

(b) PRELIMINARY AND FINAL PLANS

The Regional Public Health Engineers examine the design of the water supply and distribution system and capacity of sewage disposal facilities. In addition, the Engineer examines the plans for lighting, ventilation, washroom facilities, and adequacy of the Nurses' room. Plans which include kitchen facilities and cafeterias are referred to the area Public Health Inspector for comment.

(c) FINAL APPROVAL

The area Public Health Inspector inspects the school to ensure that it conforms to the approved final plans.

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Plans which include industrial arts shops are referred to the Department's Occupational Health Engineer for comments on the proposed ventilation.

During 1980, a total of 23 school projects were processed for approval. The following table gives the breakdown of school approvals per Health Unit.

TABLE 26

HEALTH UNIT	PRELIMINARY	FINAL	TOTAL
ATLANTIC	7	6	13
C. B. NORTH	1	-	1
C. B. SOUTH	1	-	1
COBEQUID	-	-	-
FUNDY	2	1	3
LUN-QUEENS	1	1	2
NORTHUMBERLAND	1	-	1
WESTERN	1	1	2
TOTAL	14	9	23

The number of school projects increased slightly in 1980 - 16 in 1979, compared to 23 in 1980.

Survey of Schools for Asbestos Containing Materials

The Division of Public Health Engineering undertook a major program during 1980, consisting of a province-wide assessment of schools for materials containing asbestos, and an evaluation of the health risks posed by this material. The task included the development of a province-wide program for systematic

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identification, sampling, analysis, evaluation and preparation of recommendations for taking appropriate remedial measures for areas within schools which employed materials containing asbestos in a form which posed a health risk to pupils and staff.

The program was developed in close cooperation with the Department of Education who are responsible for implementation of recommendations for corrective action in each case. The major challenge of this program was the education of personnel at all levels within the Department, as well as those involved within the Department of Education and the maintenance of uniformity across the Province. Numerous meetings were held within the Department and with the Department of Education with the purpose of educating and developing a meaningful program.

This project is not yet finished, but the status at the end of 1980 is that all sampling, analysis of results and recommendations for remedial measures were completed. Educational programs, liaison with Department of Education and follow-up procedures will continue in 1981, for pupils, staff and maintenance personnel.

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